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CHARLES H. KEENE, M.D.
University of Buffalo, Buffalo, N. Y.

Assistant Editor
GERTRUDE E. CROMWELL, R.N.
Denver, Colorado

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Vol. XX OCTOBER, 1950 No. 8

RELAXATION FOR EFFECTIVE LIVING

HELEN A. CARY, M.D.*

We live in an age of tension — streamlined with jet propelled speed the by-word. From early childhood through school age — early maturity — and adult life every action is hurry — get into as many activities as possible — keep busy doing something all the time. This attitude builds up tension early in life and it increases until relaxation seems no longer possible. This condition, called "Americanitis", is frequently observed by Europeans visiting this country. It is not universal, but is of sufficient occurrence to be a problem in the lives of a large number of our population. The drive and ambitions coupled with awareness that comes with intelligence allows the active, alert person to be particularly susceptible.

The tension of adults in the home builds up tension in the small child — tension in the classroom increases the situation — and this teaches the child the tension habit for his later business and professional life. This condition once started is built up and increases unconsciously on our part. One has only to look at the faces of people one meets on the street to see the stress expressed there or to watch the reactions of children in their daily activities. Even in our recreation there is intense competition without the pleasure which should be derived from the game.

We speed through life without taking time to live. Pleasure trips become a mania to hurry from place to place without stopping to see the beauties of nature, hear the songs of the birds, the music of the wind singing in the trees or the ripple of the brook as it wanders over its rocky bed through the woods. We have missed the things which are here for our enjoyment and which could lend a sense of relaxation instead of the increased tension which we develop. We are then just too tired to do anything which might release tension.

What is tension? It is a habit reaction with muscle tightening, coupled with the emotional response to a stimulus or situation.

* Past President of the American School Health Association, and formerly Director, Division of School Hygiene, Bureau of Health, Portland, Oregon.

As Jacobson has pointed out in his book "Progressive Relaxation," "tension (1) increases tendon reflexes, (2) increases muscle excitability and less often of mechanical nerve excitability, (3) causes spastic condition of smooth muscle, (4) results in abnormal excitability of heart and respiratory apparatus with tremor, restlessness, volubility, and other apparent over-activity involving skeletal muscles." Tension may result in any combination of these responses or all of them. In the beginning these results may be transitory, but from continued tension response to situations they may become an habitual state not even released in sleep.

The resiliency of youth seldom carries the results of tension beyond the stages of excitability, irritability, or restlessness and, may easily be reduced when the cause is removed. However, the pattern reaction of a tension response once started will, in many instances, continue gradually building up and increased tension results as maturity and adult life is attained.

Why should we be concerned with the problem of tension? Vital statistics point out the fact that hypertension and heart diseases are on the increase, as well as neuroses and anxiety tension states. Medical research is finding that these conditions may be founded on a tension state. It is necessary then as a part of any preventive program to recognize tension in youth and build a part of the health education program around these factors, so that in childhood the right habit pattern may be developed. This then becomes a problem for the schools to maintain tension free situations to build proper health habits and a better way of living.

Whereas we know that there are a certain percentage of pupils who are tension-free and that they probably will remain so; we also know that any quiet situation that is good for the child who is tense will also be of benefit to all. If this is to be done, one of the first places to begin is to see that the classroom teachers are tension-free, for tension in the instructors in a given situation communicates itself to those with whom they come in contact. The problem of teacher-tension is a personal thing and would have to be met on an individual basis. But the teacher should be conscious of the fact that her own habit reactions and philisophy of life have a definite bearing on the atmosphere of the class. It can stimulate restlessness, irritability and resistance to discipline, or it can create a calm, quiet atmosphere conducive to a healthy response from the pupil. A great many children come from homes where there is tension, and they respond to it by carrying it over into the classroom.

Tension is a feeling tone of which they are not conscious, but their habit reactions respond to it. Children are responsive to situations; a quiet atmosphere in the classroom can do much to counteract a tense reaction and give it release and help to build up a healthy response. This in turn would allay the progress of the development of increased tension in the growing child, until such a time as measures could be instituted for instruction in the classroom for the interpretation and training in correct habit response. Not only will this be of help in the management of the classroom, but the teacher will herself benefit immeasurably in her own health and feeling tone.

How can this mounting tension be met? Medical research has been conducted for some years to determine the effects of tension and how to release it. This work has been carried out at the University of Chicago by Edmund Jacobson, M.D., and others. The results show that relaxation properly carried out will have a beneficial effect on the well-being of the individual, and can be made to counteract effectively the development of tension and relieve many signs and symptoms which develop as a result of a long-continued tense habit response. For the individual with a fixed habit response it means a period of training in recognition of tension and the ability to relax, or the establishment of a good habit reaction in place of a bad one.

Physical exercise, too, has a place in the program of relaxation. We need muscular activity properly directed and properly used, for it is a necessary part of life. One of the best tension releasing exercises is walking. Here one has the rhythm of motion with the use of alternate muscles brought into play, and the rounded development of the musculature system. From this activity one can lead into many other types of physical exercise which are tension releasing when the body is used correctly.

Walter B. Cannon in his book "Bodily Changes in Hunger, Fear, Rage and Pain," has brought out through experiment that tension continued over a period of time can bring about definite irreversable changes in the various organs of the body, which become organic defects. If found in time and a program of relaxation instituted, these changes may be avoided and a good functioning system maintained.

What is relaxation? It is a state of looseness of the muscle fibres or a release of their contraction. Relaxation may be complete or partial. The natural processes over which man has no control may give guidance in the matter of rest or relaxation and

its use. We find seasonal and diurnal alternations of activity and rest. The season of growth and the season of rest — activity of work during the day and rest at night. Carrying this even further we find this same alternation in the animal kingdom. Watching the young of any species, we see the strenuous play of the kitten, the puppy or any other growing animal, followed by a period of complete relaxation. This is repeated again and again during the day, until as the animal grows older the periods of play gradually become less strenuous and longer, but still interrupted by rest and relaxation. Going still further we find the same alternation of rest and work in the organs of the human body — organs which are not under voluntary control. As an example, the heart rests between each beat, pumping the blood through the body by its contraction and then relaxing the musculature to allow the inflow of blood to fill the chambers of the heart. Regardless of the rapidity of the beat, this process is repeated continuously. As another example of a vital process, consider the respiratory system. Here the process is the same alternation of contraction and relaxation. In inspiration, the muscles of breathing are contracted to draw air into the lungs, and in expiration there is relaxation of the same muscles to allow the easy flow of air from the lungs. Thus, taking our cue from nature, we should translate our voluntary actions into a similar pattern.

There are few activities, if any, which require the contraction of muscles all over the body at one time, yet how many of us are able to release those muscles which are not needed. Observe people on the street at any time. They are tense in a large part of their body, foreheads wrinkled, worried expressions, shoulders high, hands clenched or moving, backs stiff, heads forward as if pulling the body so that they can arrive at a destination more quickly. What is their condition on arrival? Generally tense and anxious, or breathless and fatigued. How much better it would be if during the walk only those muscles were used which were needed, and the person had allowed complete relaxation of each leg in lifting it preparatory for the next step.

Or again, observe the sitting habits of most people. How few really sit back in the chair and let it hold them! You will frequently find them sitting on the edge of the chair ready to jump up, or else they are restless and constantly shifting position to relieve tense muscles. Even a few minutes sitting at rest on a chair is worth the thought of letting the chair hold you. Then

again at meal time, particularly the noon meal, we see many sitting not well back and enjoying the meal, but forward, hastily eating, so that they can save time to attack the next thing to be done. One can eat just as readily — if this be necessary — while letting the chair hold him, feeling the restfulness gained by a proper sitting posture, which will relieve some of the build-up of the day's fatigue, instead of sitting forward with tension. There is a tendency to let the voice become higher pitched — speech quicken and loss of poise with a tense sitting posture. These examples bring out the fact that many persons tend to use parts of the body at all times which should be at rest, and demonstrate how little realization there is of tenseness or the correct use of the body to get the highest efficiency out of it.

Relaxation can be complete only when one is lying down with all muscles voluntarily loosened, or it may be partial as when activities are properly carried out or, as in some instances, there may be no relaxation as when persons are tensing most of the body to accomplish a task. Complete voluntary relaxation should be expected only during sleep or planned rest, for it would be impossible for us to carry out our life activities in this state. Nor can we continue to accomplish successfully our jobs if there is excess tension over a period of time. Our relaxation has to be partial and well balanced with the minimum of tension to complete any undertaking. Relaxation is not something that we can put on or set aside at will if we expect to function at a maximum of efficiency. It is something of which we have to be conscious at all times and release those muscles which are not in use. Except as the habit becomes complete, we must continue voluntarily to relax from action all parts of our body which are not actually needed at the time. For instance, in standing, if we stand with the feet slightly apart increasing the base, equally distributing the weight on both legs it gives greater stability in the upright position, and the opposing muscles are put under less train and are able to assume a position of equal balance, so that there is the least amount of tension possible to maintain the upright posture.

Sitting with relaxation and standing easily are things which can be learned in the classroom. If the habit is formed here, it can be carried into other situations, and thus the periods of relaxation increased. Relaxed positions in the classroom will aid in the ability of the pupil to concentrate on the task at hand and relieve the wandering thoughts which are bound to come with tension. We can practice these habits without training, other than con-

sciously thinking about them until they become fixed and we no longer have to give them any thought.

Much can be done through the school program to aid in the ability to relax partially at all times. In working with tense patients it is found that those who have been trained athletes learn to form the habit of relaxation in every-day life more readily than others. When a tension state appears they can quickly reestablish the translation of a relaxed habit reaction by a refresher course of training. In the athletic activities they have learned to use only those muscles which are needed, and how to make each motion count in the accomplishment of the task which they are doing. Training in physical education for the proper use of the body, with emphasis on the recognition of muscle tension and how to relax will do much towards the formation of good habit reaction. It can make the student conscious of his ability to release contraction in some muscles while using others. This can be carried farther with practical application in the sports program. Here training is given for the use of specific muscles to accomplish a given end while the student is competing. Well-trained wrestlers learn that by relaxing certain muscles while contracting others they may release themselves from their opponents' holds. On the football field the players learn to fall so as not to hurt themselves, and to rest between plays so that they may reserve their strength for the combat. In basketball, the player who can maintain an accuracy of shot and stamina is the one who can be alert, yet with muscles relaxed while not actually in the current play. Who has not heard the instructor of golf say relax while readying for a play?

We could go on and on with examples. There is a loss of accuracy of movement — unnecessary motions — loss of timing in athletic contests, where the players cannot maintain a partial relaxation when not actually in action. The player learns alertness, combined with a balanced partial tension and relaxation. A well coordinated program in intramural sports, with the entire enrollment taking part, could do a great deal by instructing towards the development of a greater ability of the students to use their bodies efficiently. Both the physical education instructors and the athletic coaches should place special emphasis on the translation of partial relaxation learned in the gymnasium and on the playing field into all daily activities.

Phyical relaxation does not indicate laziness or indolence. It means operating at a maximum of efficiency with a minimum of

effort. With tension there is lost motion, awkward inaccurate reactions. After proper training one can move quickly while relaxed, produce much less fatigue and still accomplish more, because each motion works toward the desired goal. This habit reaction of partial relaxation, if well-learned in athletic activities, can readily be translated into every-day living.

The ability to maintain partial relaxation, if carried into adult life, brings with it the ability to think more clearly, to meet problems presented and to maintain a state of stable equilibrium. The nervous system is not cluttered up with the non-essentials, which may short-circuit thoughts and actions or fill it with unnecessary worries over little things of no consequence. It leaves the mind free to attack the problem at hand. It prevents the development of anxiety tension states and forestalls neurotic tendencies. One needs to develop an understanding of the relative importance of problems and consider them in their relationship to life as a whole. If one can maintain a partial relaxation throughout the day, it is not difficult to place problems in their relative importance considering — those tasks which must be done, those which should be done, those which can be done, and those about which we should question as to why do them at all. Many things are done for the purpose of appearing busy, and have no bearing on the over-all progress of success. Busy business causes a useless expenditure of energy on side-tracked activities and produce tension because the necessary activities remain undone. This time could have been used for a short period of complete relaxation, to build up a reserve for constructive activity. Anyone who will take the time to think "Why am I doing this?" will frequently find there is no purpose, nor does it bring pleasure or enjoyment. It just fills in time and unnecessarily uses up energy.

Some can learn relaxation on their own, following definite directions, giving a description of the exercises as to how to relax, while others will need professional instruction. The knowledge of recognition of tension and how to relieve it thus gained, however, must be put into daily and continuous use by the individual if it is to accomplish the desired aim of an anxiety free way of living. Relaxation is not a cure-all. It is a way of life and has a place in every-day living, if we as Americans are going to cut down the incidence of hypertension, heart disease and anxiety tension states. A good muscle habit reaction pattern will give a feeling of well-being, vigor, and increase the joy of living. Your viewpoints and unhurried ability of accomplishment will be a stimulus and source of inspiration to others.

HEALTH EDUCATION WORKSHOPS IN ILLINOIS

FLORENCE B. BENELL

Tallahasee, Florida

The World Health Organization has emphasized that the health needs of children cannot be separated from their general needs. The child should be able to satisfy his needs and grow healthfully to live happily in today's constantly changing environment. Many of these needs are met through the home, some through the community and many through the school. All these influences should be pulled together. In all three places there is a need for interchange of health facts, attitudes and habits. What better way to gain this goal than through parents, community and school solving health problems together; especially health problems of their children. One method to meet this need is through a school-community health education workshop.

A health education workshop offers an opportunity for participants to solve mutual problems cooperatively under the guidance of experts. Through such a technique group dynamics pervades. The participants learn how to work with groups, how to solve problems as a group, and how to make use of group interaction. In this way new ideas are conceived, experience shared, new skills are learned and new insight is gained into individual and other people's problems.

To meet these objectives, some of the colleges and universities in Illinois have held workshops in health education during their summer sessions. The first such workshops were held at Illinois State Normal University, Normal and at Southern Illinois University, Carbondale in the Summer of 1945. They were also held in 1946. In 1947 the program expanded to a few more schools. In addition to the two aforementioned, health education workshops were held by the following colleges: Northern Illinois State Teachers College, George Williams College, and the University of Illinois.

The year 1948 showed an even greater increase in the number of health education workshops. Not only were health education workshops continued at the five schools that held them in 1947, but workshops also were at : Eastern Illinois State College, Rockford College, St. Francis College, Joliet, and Loyola University. In 1949 an additional college joined the list, it was Western Illinois State College. Most of these schools planned health education workshops for the summer of 1950.

In planning health education workshops for teachers it is desirable to have the prospective staff well-versed in the latest workshop techniques. It is also well to have school administrators and members of health agencies understand these workshops. Toward this goal, the office of the Superintendent of Public Instruction of Illinois since 1946 has held special workshops every year. The purpose of the workshops for college and university health coordinators was to set up some uniformity in workshop methods, techniques and programs through cooperative discussion under the guidance of experts in the field. The purpose of the administrators' workshops was to orientate them in generalizations in health education and health problems as well as in specific problems peculiar to their locality. In this way the school administrators were in on the ground floor and, therefore, cooperated in the selection of the teachers who participated in the workshops. They also backed these teachers in their subsequent health programs at their schools.

It is true that the general objective of the health education workshop is to educate cooperatively for healthful living among parents, community and school. It must be borne in mind, however, that all the workshops held by the Illinois colleges and universities were not entirely similar in participants nor in educational technique. Because a workshop by definition is flexible, the methods used by the various workshops was dependent upon location, health needs, participants, staff and school.

In general, however, there is a conceptual framework that pervades all workshops. It would be well to expand upon this point.

In planning a workshop it is desirable to have a pre-workshop conference in the workshop area of community leaders,school administrators, parents and teachers at least six months prior to the workshop. The purpose of such a conference is to acquaint the interested persons with generalizations in health education and health problems as well as in specific problems peculiar to their locality. At this meeting, workshop techniques are explained. Such conferences were held by many of the colleges. This offered the staff and participants of the workshops support from their communities, school administrators and parents in both the workshop and follow-up experiences of the workshop.

The directors of the various workshops, wherever possible, held pre-workshop interviews with the prospective participants. Most of the participants in the workshops were teachers. One

exception was the George Williams College Workshops. The participants in these workshops were not only teachers, but YWCA and YMCA health educators, community center directors, nurses, social workers and Red Cross Staff workers.

The pre-workshop interviews helped in surveying the health problems of the prospective participants. They also helped in selecting only those participants who were interested and ready for the workshop.

The staff and guest consultants in many of the workshops were chosen on the basis of these pre-workshop conferences and interviews. Other pre-workshop conferences were held to orientate staff with the participants' problems, workshop objectives and the kind of experiences that would meet the needs of the participants.

After the pre-workshop contacts were made, listings were made of the needs and problems of the participants. These problems were used in part to draw up the general topics for study in the health education workshops. In many instances the workshop staffs' way the participants were divided according to mutual needs. Some participants did change groups after a few meetings of the workshop, but that was anticipated by the various staffs.

The staffs of the workshops were carefully chosen to meet the needs of the participants. In some colleges, the staff included specialists that were not regular members of that faculty. Guest consultants were from the Office of the Superintendent of Public Instruction, the Illinois Department of Public Health, U. S. Public Health Service, U. S. Office of Education, Universities, voluntary health agencies and educational departments of commercial agencies. Some guest consultants remained only a day, others as much as several weeks at the various workshops.

The workshops' permanent staffs and guest consultants worked together very well in the daily schedule largely because of a very important characteristic of a workshop:—its flexibility.

The general vein of most of the health education workshops was to dig deeply into several main health areas, the participants were shown how to work in these areas and how to solve mutual health problems together in a democratic fashion. Always, the staffs were cognizant of the things that had to be related, such as: the organization of the participants into groups as well as the organization of the health problems to be solved. Other things that had to be considered were: The organization of the content,

audio-visual aids and resource materials, and evaluation techniques of the workshops.

What were some of the main problems that were solved at the Illinois workshops? One that seemed very prevalent was the school-community nutrition problem. The participants learned how to teach nutrition through preparing teaching units for their own schools. They learned how to organize school-community nutrition councils to work out the nutrition problems pervading their communities. School-lunch programs were born.

Our problems dealt with mental health, safety, forming health councils, school health environment, health services, community health resources, audio-visual aids, school-community health programs, dental health, cleanliness, and curriculum development in health. In all workshops every participant was given the opportunity to learn new skills related to health education. Some of which were: (1) Modern techniques for testing vision and hearing, (2) methods of measuring growth and development, (3) acquiring skills in use of film and slide projectors, (4) group dynamics, (5) socio-drama, (6) preparation and use of audio-visual aids, (7) technique of preparing health units.

The content of the workshops in form of materials and resources was applicable and adapted to the various communities. It was also based on the opinions of the staff personnel. Since the promulgation of good school health predisposes an integration of school and community agencies, the workshops included such coordination. The workshops gave more than health facts, they offered health education understandings, skills, habits, appreciations and philosophies.

The health education workshops had staffs that helped their participants to see how various techniques could help them in solving problems. They were shown that through means of solving one problem they could also solve other health problems. Problem-solving alone was not an end in itself; values of socialization of the workshop members, values of human relations were emphasized. Because of this, role-playing (socio-drama), audio-visual aids, group dynamics, demonstration, experiments, field trips, community programs, and many other techniques were incorporated into the problem-solving of the participants.

Such were the workshops in Illinois. Through their stimulation and techniques better health education has pervaded schools and communities in Illinois.

PRELIMINARY CONSTRUCTION PRINCIPLES RELATING TO HEALTH EDUCATION TESTS

WILLARD WALTER PATTY, *Dean*
School of Health, Physical Education, and Recreation
Indiana University

Health education test construction problems seem to fall into three categories: (1) those problems confronting all persons constructing "pencil and paper" tests, (2) those special problems which are met by the teacher who develops tests for his own pupils, and (3) those peculiar to the construction of tests for use on a wider scale—usually published for sale and use throughout the Nation.

In order of procedure another division may be made: (1) the preliminary construction of a health education test, and (2) the application of appropriate principles and various more or less technical procedures for refining tests. In this article it is the intent to stress the practical points pertinent to preliminary construction of health education tests. It is felt that this unit has special utilitarian significance to the teacher constructing tests for his own classes.

The pure theorist might well assert that every test, even one prepared by a teacher for his own class, should be refined before official use. Those who are realistic, however, recognize the time limitations under which the ordinary health educator works. Some teachers may have such interest, time, and professional preparation that they apply refinement techniques to their own tests for their own classes. Splendid, if they do! It may be agreed, however, that certain sound principles should be followed by all in constructing initial forms of tests.

This unit deals, then, with problems and principles of preliminary construction of tests. Elsewhere, and at another time, consideration will be given to refinement of health education tests.

Essential Principles of Health Education Test Construction

Validity. Does not everyone desire to discover the truth when he tests? To do so the test itself must be honest. A statement accredited originally to Dr. W. A. McCall has probably never been improved upon. In effect he stated that a test is valid if it tests what it purports to measure.

One application of this principle in health education test construction is that a satisfactory short-cut to measuring health habits by pencil-and-paper tests has not yet been developed. Such

a written test might have considerable validity as a test of what the pupil knows concerning health habits that are approved, but not reveal honestly the habits he practices. Other illustrations will appear in connection with discussions of other factors to be considered in test construction.

Reliability. A test may be undesirably low in validity, but be uniform in the results obtained—and therefore highly reliable. Conversely, however, a test cannot be valid unless it has a satisfactory level of reliability. "If a test is valid it must of necessity also be reliable, whereas a reliable test may not be valid."[1]

The reliability of a health education test is the quality of consistency or agreement with which it measures. A reliable test should secure identical or closely similar results from comparable pupils. It should also get comparable scores when readministered to the same classes before opportunities for additional learning occur.

What factors favorably influence reliability of health education tests? Such factors may be considered in two categories: (1) those concerning the construction of the test, and (2) those relating to the administration of the test.

Basic Factors in Test Construction Affecting Reliability

Some of the important general factors of construction which are favorable to the reliability of a test are: (1) clarity and completeness of printed directions to the testee, (2) organization and arrangement of test items and test sections in distinct and understandable form, (3) test length sufficient to provide a reliable sampling of subject matter, but not so long as to induce extreme fatigue or exceed interest spans of testees, (4) legibility —printed, mimeographed, and hectographed usually rating in that order of desirability, and (5) a satisfactory objective key for scoring the test.

Other factors affecting reliability of measurement by specific types of test questions can be more effectively treated in connection with the discussion of the types of questions to which they are peculiarly related.

In a sense, a consideration of factors of test administration which affect reliability is extraneous to the topic of test construction. However, it should be recognized that careless or varying methods of administration of a well constructed test may lower its potential reliability. Well constructed tests will therefore

1. Remmers, H. H. and Gage, N. L.: Educational Measurement and Evaluation, p. 201. Harper & Brothers, New York, 1943.

include such elements as: (1) clear and complete printed directions to testees before each section, (2) printed statement of time limits, and (3) a preliminary statement to be read to and by pupils concerning the purposes of the test and procedure to be followed. Any introduction of the personality of the teacher into the testing situation, either pleasing or unfavorable, will reduce the reliability of results.

A separate manual of directions for the administrators of the test should improve reliability of results.

Characteristics of Health Education Tests Affecting Validity

It is almost unnecessary to point out that a test possessing low validity may not only have little worth, but may actually be harmful. The builder of health education tests is under compulsion to spare no effort to select and phrase questions so as to obtain the highest degree of validity possible.

Scope. What is the purpose of the test concerned? An honest answer to that question is the first duty of the constructor of a health education test. The *name and content of the test should be in accord with its purpose.*

Is the test one of health attitudes or of health knowledge? Its title should be chosen accordingly. Then the constructor should take every precaution possible to *make sure that the test questions measure the kind of outcome mentioned in the title.*

Is the test a general test, or a measure of health education outcomes in a certain grade of the local school? The *name given to the test should be appropriate to its limitation.*

Health Authenticity. If called a health knowledge test, are the questions restricted to knowledge concerning health education outcomes, Some tests which are published for commercial distribution contain questions outside the health education field, as that field is usually defined. Frequently health knowledge tests contain questions concerning *first aid.* An actual example* may illustrate the point. In a published health knowledge test question number ninety-nine reads: "The best first aid for a turned ankle is: 1." etc. Sometimes *safety* education questions are included. Another published health education outcome test* includes as its seventieth true-false question: "When walking along a highway, one should keep to the right side." Occasionally a test contains a question *entirely extraneous* to health. The eighty-ninth question in a published health knowledge test* is: "In tennis the work for a

* The published sources are omitted because no derogatory reflection against any particular test or its author is intended.

zero score is: 1." etc.

One can understand the temptation to include questions concerning first aid and safety in health education tests, since health facts and principles are sometimes closely related to safety and first aid. Moreover some schools provide a sort of an omnibus course in which units concerning first aid, health, and safety are included. A valid test for such an omnibus course might well include such a diversity of questions, but should not be called a heatlh education test. It is believed that even in such an omnibus course, where separate courses cannot be provided, the tests of the various areas of knowledge should be developed separately and labeled appropriately.

The inclusion of a question of sport information, such as tennis scores, in a health knowledge test seems so extremely invalid as to be entirely indefensible. Teachers and other constructors of health education tests have obligations to organize their own knowledge and thinking into definite areas so that their tests may help to clarify rather than to confuse. The questions in a health education test should be restricted to authentic health questions that are valid for a test with the title indicated.

Balance. Is the number of questions concerning each health area in a health education test in direct proportion to the time, reference space, and emphasis given to that area during the course? It is believed that the answer for every good test should be in the affirmative. No such test can rate high in validity unless it *measures the outcome evaluated with direct relation to the various areas of knowledge and attitude outcomes sought.*

Usually health education courses include such areas as: defense against communicable diseases, intemperance, physiological justification of right health practices, health laws and ordinances, nutrition, social hygiene, emotional health, community health organization and responsibilities, and others. If twenty per cent of the space in reference materials and of the meeting time of a tenth grade course is devoted to nutrition, it seems that approximately the same percentage of the test should deal with health items in the nutritional area. The same principle should be followed in developing test questions concerning any health education area of knowledge or attitudes included in the grade or grades encompassed by the test.

Too frequently teachers follow the procedure of scanning the references and selecting for inclusion in a test those things that lend themselves readily to the forms of objective-type questions.

When such a teacher secures what is considered to be a sufficient number of questions the test is termed complete. A test which disregards the principle of balancing test questions with subject-matter emphasis cannot test what it purports to test and, therefore, is low in validity.

"The quality designated as *relevance to the ultimate goal* is the prime essential of a criterion measure."[2]

Significance. Convenience of adaptation of reference items to objective-type test questions may also result in the inclusion of inconsequential health details in a test. Health textbooks and other reference materials contain many statements that are merely explanatory rather than of fundamental importance. Good teachers discriminate between important and unimportant health facts and principles, and emphasize essentials. In order to possess a high degree of validity a health education test should consist of questions concerning significant items.

Phraseology. While the phraseology of health education test questions indubitably affects the reliability of the tests, it also is an important factor among those determining the level of validity. Since a health education test purports to measure health education outcomes, any extraneous factors should be eliminated or reduced to a minimum.

Among the phraseology factors meriting attention is the *vocabulary difficulty* of the directions to the pupil and of the words used in the questions. It is apparent that the words used in phrasing questions should be those in common use and as simple as possible. *Ambiguity* of phraseology should be avoided. *Sentence structure* should be *uncomplicated* and brief. The occasional practice of resorting to *tricky phraseology* in order to make questions difficult seems inexcusable.

Statistical manipulation. The constructor of a test is creating an instrument for measuring health education outcomes. The fundamental common sense factors affecting validity heretofore mentioned, and others that may apply, should influence procedures in forging a tool to find the truth. No amount of statistical "juggling" can make valid the results of administering a test consisting of questions which are untrue measures of health education achievement.

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* * * * *

REVIEWS

Effective Living,—*C. E. Turner, A.M., Ed.M., Sc.D., Dr.P.H.* and *Elizabeth McHose, B.S., M.A.* Prentice-Hall, Inc., 1950, pp. 452. Price $2.40.

This is the third edition of the text since 1941. Divided into three parts: Effective Living for the Individual, Effective Living in the Family and Effective Living in the Community it is authentically accurate, interesting and well-planned.

Each of the fifteen chapters is ended with a group of self-checking questions and a number of problems and activities for study and discussion.

A concise appendix on the control of communicable disease and one of references and source materials conclude this excellent secondary school text.—*C. H. K.*

* * * * *

"Elements of Healthful Living," *Harold S. Diehl, M.D.*, 2nd Edition, McGraw-Hill Book Co., New York, 1950, pp. 330. Price $3.00.

This is a condensation of the much larger "Textbook of Healthful Living" — an effort to get that text within the time limits of the all too short course offered in many colleges and universities. The shortening has been accomplished mostly by the omission of some twelve chapters of the thirty in the larger text. The result is a text much more within the scope, needs and capabilities of the usual college class, particularly since the final chapters of the larger text—seven of those omitted—have much more bearing on public health than on the health living of the individual. —*C. H. K.*

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EDITORIALS

The present issue of *The Journal of School Health* carries the more complete Program of the Annual Meeting at St. Louis. Those of us who are fortunate enough to be present on Monday, October 30th, will hear a particularly good set of papers. The Monday evening session is being devoted entirely to "Tuberculosis Control Problems in Schools." Probably this is the best set of presentations, and by expert specialists in tuberculosis, that has ever been offered at a single session anywhere. J. Arthur Myers, M.D., Chairman of the American School Health Associations Committee on Childhood Tuberculosis is to be congratulated—and thanked—on assembling this program.

* * * * *

Great shifts in school populations are evident as the schools have opened this fall. Two things are striking, and follow what the recent census indicated:

1. The great migration of our people toward the west—to the Pacific states and especially to California; this westward trend is due largely to the great increase in industries there, the milder climate and—the migrants hope—better living conditions.
2. The dispersion of city populations to suburban areas; due, apparently to a desire for a more spacious and less smoke-filled environment, and the steadily increasing traffic conditions in cities. This outward shift is accentuated by the

rapid growth of shopping and parking facilities in the suburbs. Not the least of the causes of change are the high city tax rates, and the generally low level of politics-ridden city government.

Great adjustments are needed in school organization to meet the shifts. Many city school enrollments are not increasing and some—notably Buffalo, N. Y.—are diminishing. Ultimately, this means that these cities will have smaller classes. Fewer classes means usually a smaller tax for school purposes. While in some cities, there might well be smaller classes, this shift cannot go on indefinitely. A high per child cost is not always balanced by a greater educational efficiency.

Those school districts with rapidly increasing school enrollments face the need of greater facilities and a large number of teachers. It takes time—as well as salesmanship—to build new buidings, even when growth is providing more tax income. More teachers are reported to be in plentiful supply at the secondary school level, but there seems to be a shortage for the elementary grades—at least of well trained ones.

Moreover, the upsurging increase of the numbers of pupils of elementary school age develops great need of more school physicians and more school nurses.—*C. H. K.*

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PROGRAM ANNUAL MEETING
AMERICAN SCHOOL HEALTH ASSOCIATION
ST. LOUIS, MISSOURI, OCT. 30 - NOV. 4, 1950

Monday, October 30, 1950 — 9:30 A.M.

FIRST GENERAL SESSION—

Gold Room, Hotel Jefferson
Presiding, WILLIAM AYLING, M.D.
Theme: *"The Nurse in the School Health Program"*

1. *Administrator's Point of View*
   C. MORLEY SELLERY, M.D.
   Director of Health
   Services, Los Angeles City Schools, Calif.
2. *Nurse in a Specialized Program*
   MRS. HENRIETTA SCHWARZLER, P.H.N.
   Staff Nurse, Denver Public Schools, Colorado
3. *Nurse in a Generalized Program*
   MISS KAY DIERKES, P.H.N.
   Staff Nurse, St. Louis County Health Dept., Missouri
4. *Nurse in a Jointly Administered Program*
   MISS PATRICIA HILLIARD, P.H.N.
   Staff Nurse in the Joint Program Hammond, Indiana

SECOND GENERAL SESSION—

Monday, October 30, 1950 — 2:30 P.M.

Assembly Hall, No. 3, Kiel Auditorium
Presiding, GERTRUDE CROMWELL, P.H.N
Theme: *"School Health Problems"*

1. *Common Skin Conditions Met in School*—color slides
   A. R. WOODBURNE, *M.D., Specialist in Dermatology*
   Denver, Colorado
2. *Examination and Evaluation of Athletes*
   THOMAS E. SHAFFER
   Ohio State University, Columbus, Ohio
3. *Family Life Education*
   MISS HELEN MANLEY
   Director of Health, Physical Education and Safety
   University City Public Schools, Missouri

Monday, October 30, 1950 — 8:30 P.M.

Gold Room, Hotel Jefferson
Presiding: J. A. MYERS, M.D.
Theme: *"Tuberculosis Control Programs in Schools"*

1. *Tuberculosis Among Members of School Personnel*
   D. O. N. LINDBERG, M.D., *Medical Director*
   Utah State Sanatorium, Ogden, Utah

2. *Importance of and Accomplishments in Tuberculosis Control Among School Children*

S. A. SLATER, M.D., Medical Director
Southwestern Minnesota Sanatorium, Worthington, Minn.

3. *The Part of Local Practicing Physicians and Tuberculosis Control in Schools*

L. L. COLLINS, M.D., Medical Director
Madison County Sanatorium, Edwardsville, Ill.

4. *Tuberculosis Control and Teaching Tuberculosis in Schools*

DAN MORSE, M.D., Medical Director
Peoria Municipal Tuberculosis Sanitarium

— and —

R. H. RUNDE, M.D., Medical Director
Peoria County Chest Clinic, Peoria, Ill.

5. *Certification of Schools with Reference to Tuberculosis Work in Progress*

L. S. JORDAN, M.D., Medical Director
Riverside Sanatorium

— and —

KATHLEEN JORDAN, M.D., Staff Physician
Minnesota Public Health Association, Riverside Sanatorium
Granite Falls, Minn.

6. *Can Tuberculosis Be Eradicated from School Children*

EDWIN R. LEVINE, M.D.
Michael Reese Hospital, Chicago, Ill.

Tuesday, October 31, 1950 — 9:30 A.M.

MATERNAL AND CHILD HEALTH AND SCHOOL HEALTH SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Assembly Hall No. 3, Kiel Auditorium

Presiding: PAUL R. ENSIGN, M.D.

Theme: *"Some School Health Problems"*

Epilepsy—*Panel Discussion*

Moderator: HERBERT R. KOBES, M.D.

Participants:

Clinical Aspects. FREDERIC A. GIBBS, M.D.

Community Aspects. BEN H. GRAY

Educational Aspects. RAY GRAHAM

Division of Responsibility in a School Health Program
SAMUEL M. WISHIK, M.D.

Wednesday, November 1, 1950 — 9:30 A.M.

FOOD AND NUTRITION, MATERNAL AND CHILD HEALTH AND SCHOOL HEALTH SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Assembly Hall No. 1, Kiel Auditorium

Presiding: MARGARET C. MOORE

Theme: *"Child Growth and Development"*

Panel Discussion

Moderator: HAROLD C. STUART, M.D.

Participants:

LESTER SONTAG, M.D.
ALFRED H. WASHBURN, M.D.
J. D. BOYD, M.D.

FOURTH GENERAL SESSION—DINNER MEETING—

Wednesday, November 1, 1950, 6:30 P.M.—

Private Dining Room, No. 1, Hotel Jefferson

Presiding: WILLIAM E. AYLING, M.D., *President*

Presentation of the William A. Howe Award to V. K. Volk, M.D., Saginaw, Michigan.

Response by Recipient

Dinner Speaker

Thursday, November 2, 1950 — 9:30 A.M.

MATERNAL AND CHILD HEALTH AND SCHOOL HEALTH SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Assembly Hall No. 2, Kiel Auditorium

Presiding: WARREN H. SOUTHWORTH, DR.P.H.

Theme: *"Round-Up of School Health Research"*

A Study of Health Examinations by Voluntary Health Agencies
ALFRED YANKAUER, JR., M.D.

The St. Louis Vision Testing Project
RICHARD G. SCOBEE, M.D.; PHILIP J. HICKEY
FRANKLIN, M. FOOTE, M.D.; MARIAN M. CRANE, M.D.
LLOYD L. TATE, M.D.; HELEN B. WEAVER, R.N.

Discussion:

Physician Participation in School Health Programs
DONALD A. DUKELOW, M.D., AND FRED V. HEIN, PH.D.

Experiences with a Rheumatic Fever Institute
RUTH WHITTEMORE, M.D.

Thursday, November 2, 1950 — 2:30 P.M.

DENTAL HEALTH, FOOD AND NUTRITIONAL, MATERNAL AND CHILD HEALTH, AND SCHOOL HEALTH SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Assembly Hall No. 1, Kiel Auditorium

Presiding: FRED V. HEIN, PH.D.

Theme: *"School Health Councils*

(Speakers to be announced)

Friday, November 3, 1950 — 9:30 A.M.

FOOD AND NUTRITION, MATERNAL AND CHILD HEALTH, AND PUBLIC HEALTH NURSING SECTIONS, THE AMERICAN SCHOOL HEALTH ASSOCIATION AND THE COMMITTEE ON CHILD HEALTH

Joint Session—Assembly Hall No. 1, Kiel Auditorium

Presiding: SAMUEL M. WISHIK, M.D.

Theme: *"The Child Health Conference"*

Current Practices and Trends in Child Health Conferences
SAMUEL M. WISHIK, M.D.

Use of Child Health Conferences for the Training of Physicians
PAUL A. HARPER, M.D.

Demonstration of a Child Health Conference
READ BOLES, M.D., AND BETTY KOSTER, R.N.

Use of a Child Health Conference in Personality Building
DAVID LEVY, M.D.

* * * * *

ABSTRACTS AND NOTES

Tuberculosis,—*A Communicable Disease*—Tuberculosis ranks first as the cause of death among infectious diseases. It takes the lives of more people than all other infectious diseases combined.

Of all diseases caused by a germ, tuberculosis is the most destructive in terms of lives lost and suffering entailed.

It takes more than 40,000 lives a year in the United States.

It is killing at the rate of one person every 13 minutes.

It leads all diseases as a cause of death in the age group from 15 to 35. But it can — and does — kill at any age, from infancy to old age.

*From material provided by the National Tuberculosis Association.

It killed 1,636 children under 15 in 1948; 2,623 persons 75 years of age and over.

It causes one out of every 30 deaths in this country; one out of every 13 deaths among Negroes.

It selects its victims from all walks of life. No one is immune to tuberculosis, but the mortality rate is seven times as high among unskilled workers as professional people.

It is attacking approximately 100,000 persons a year. This means that a year from now about 100,000 persons who today are free from tuberculosis will have the disease.

It robs this nation of approximately 1,000,000 working years each year—time lost by people who die of tuberculosis.

It cuts off an estimated 1,500,000 potential years of life annually—years lost by those who die of tuberculosis.

While the tragic cost of tuberculosis in terms of human values —of broken homes, of suffering caused by tuberculosis—cannot be calculated, certain economic costs can be estimated. Each year more than $350,000,000 is expended by public and private health agencies for the care of patients, for case finding, public health nursing, health education, rehabilitation, treatment by private physicians, hospital maintenance, assistance to families when the wage earner is incapacitated by tuberculosis, medical research, and pensions to veterans. Not included in this estimate are the cost of hospital construction or the tremendous costs of lost wages and lowered production.

Finding Tuberculosis, — An important step in preventing the spread of tuberculosis is finding all persons with the disease in active form and seeing that treatment is provided for them.

It is estimated there are nearly 500,000 persons with active tuberculosis in the United States. Approximately half of these are known to health authorities and are under some kind of treatment. But almost a quarter of a million people unknown to health authorities are believed to have tuberculosis. Some of these people probably do not even know they are ill because tuberculosis does not reveal itself when it first strikes. The search for unknown tuberculosis, therefore, must be made among apparently healthy persons.

Principal aid in the search for unknown tuberculosis is the chest X-ray. The X-ray can "see" suspicious shadows in the lung and is widely used in looking for unknown tuberculosis and in the diagnosis of the disease.

Since the development of X-ray machines using miniature film, the search for unknown tuberculosis has been greatly speeded

up and has permitted the screening of large groups of people in relatively short periods of time.

In 1949, approximately 14,000,000 small chest films were taken in the United States by health departments, tuberculosis associations, and hospitals. It is estimated that the number will be increased to 16,000,000 in 1950.

When the small film reveals signs suggesting chest pathology, a larger film is taken. If a diseased condition is still indicated, other tests are made before final diagnosis.

If every adult had a chest X-ray at least once a year, the unknown cases would soon be located and the disease would more and more frequently be found in the early stage when it is easiest to cure.

When active tuberculosis is diagnosed, the individual should be placed under treatment at once.

Treating Tuberculosis—Tuberculosis can be cured.

Bed rest is basic in treatment.

Treatment is best undertaken in a tuberculosis hospital or sanatorium.

Climate is not important in the treatment of tuberculosis. Physicians usually recommend that patients enter a hospital in a locality within visiting distance of family and friends.

Bed rest may be supplemented by drugs or surgery or both in the treatment of tuberculosis.

The drug most frequently used in treating tuberculosis today is streptomycin.

Streptomycin is not a cure for tuberculosis. Nor is its use always advisable. It is, however, a valuable aid in treating certain types of tuberculosis. Today, it is usually used in combination with another durg. Its must frequent companion is paraaminosalicylic acid (Pas). Other drugs are also being tested for their value with streptomycin.

Tuberculosis—(the leading cause of death—ages 15 - 34)

Although tuberculosis ranks seventh as a cause of death in this country, it is the first cause of death from disease among persons aged from 15 to 34, usually the most productive years of life.

Experience has shown that a large proportion of cases of tuberculosis is found among:

1. Persons who have lived or worked with someone who has active tuberculosis.
2. Medical and nursing students, physicians and nurses, hospital attendants, patients in general hospitals.

3. Special population groups—Negroes, Mexicans and other Spanish - speaking persons, Indians, Chinese, Japanese, Filipinos, Eskimos.
4. Other special groups—relief recipients, inmates of institutions, diabetics.
5. Older men, especially those in poorly paid occupations.
6. Employed women and young mothers.
7. Young people in their late teens and early twenties.
8. Persons working in occupations where they are exposed to free silica dust.

Tuberculosis among cattle, known as bovine tuberculosis, is of minor importance in the United States today. This improvement is due to energetic control measures instituted by the U. S. Department of Agriculture and to the practice of pasteurizing milk offered for sale. Milk which has been pasteurized does not carry disease germs. These measures have resulted in a great reduction in the number of children who are crippled by tuberculosis of the bones and joints.

* * * * *

High School Football Injuries,—Hibbert reviews statistics on high school athletic injuries during the 1948-1949 school year, covering 46,824 athletes in four selected states—one in the Pacific Northwest, one in the Rocky Mountain group, one in the Southwest and one in the South. From this cross-section it was found that 20.2 per cent, or approximately one out of every five participants was injured, while fatalities were approximately one out of every 25,000 participants. Football accounts for 86.3 per cent of these injuries. One out of every five of the injured or one out of every 25 of the athletes can expect a fractured bone. It has been proved conclusively that the younger the athlete the more likely he is to be injured. A boy in the 16-year group is five times more likely to be injured than one in the 18-year group. Whereas, formerly fullbacks and guards had the most injuries, now the injuries are more evenly divided among the various positions, although the quarterback position is still the safest. For every injury in the first half of the game there will be two in the second half; the third quarter is still the danger spot. Injuries are less frequent during offensive then during defensive play — 46 and 54 per cent, respectively. Journal A.M.A., August 5, 1950, p. 1284, from Rocky Mountain Medical Journal.

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National Safety Council,—New Administrative Service—The School and College Administrative Service enables all school per-

sonnel constantly to keep up with the developments in safety education. It includes latest information on new publications, films and other teaching aids.

Full membership privileges, such as consultation with staff experts; use of Council's library facilities; participation in annual meetings and special School and College studies; privilege of purchasing National Safety Council material at member price; an opportunity to apply for National Safety Council Honor Roll Certificates are some of the things which constitute the Administrative Service.

Materials included are SAFETY EDUCATION magazine, Safety Beacon newsletter, Safety Scope newsletter, Safety Sentinel newsletter, Student Safety Organization newsletter, School Shop Safety newsletter, Accident Facts, Congress Transactions—School Sessions, National Directory of Safety Films, Safety Education Memos 2 and 2A, and an introductory supply of Student Accident Report forms.

For particulars, write to Wayne P. Hughes, Director, School and College Division, National Safety Council, 425 North Michigan Avenue, Chicago 11, Ill.

* * * * *

Inflammable Materials, — This editorial office has received propaganda to the effect that rubber foam is highly inflammable.

Enquiry to the National Safety Council brings back a statement from Mr. F. A. Van Atta that while rubber foam is highly inflammable, its use "adds no new hazard to the upholstery business, since all of the materials commonly used in upholstery, even including feathers, are highly flammable."

* * * * *

Extensive Mass BCG Vaccination,—Salvioli discusses the preventative value of BCG vaccination and the advisability of extensive mass vaccination. He concludes that extensive mass BCG vaccination is in the experimental phase, and that it may be dangerous for an antiallergic person. BCG vaccination should be given only to newborn infants and not to school children or adolescents. Journal A.M.A., August 12, 1950, p. 1374. Abstracted from Minerva Medica, Turin.

General Organization Plan and Objectives of the Health Service Department Denver Public Schools 1950-1951

Advisory Committee of County Medical Society

Cooperating Agencies of City and State

Board of Education

Superintendent of Schools

Director of Health Service

Audiometrists
Medical Consultants in: Vision
Hearing
Mental Hygiene

Nursing Program

1. Confers with children, parents, teachers, and others on acute health problems and their corrections.
2. Assists in meeting health needs occurring at school.
3. Assists medical examiners.
4. Assists school personnel in making vision and hearing tests, weighing and measuring, and inspections for communicable diseases.
5. Keeps up-to-date cumulative health and growth records on each child for the evaluation of health needs.
6. Confers on suitable health education materials and projects at the request of teachers.
7. Assists with evaluation of health program of the individual school.
8. Assists with parent-teacher and parent-education programs.

Dental Program

1. Gives dental inspections and instruction to all children.
2. Reports results of dental conditions.
3. Assists with group dental education.
4. Staffs a corrective dental clinic for indigent children.

Medical Program

1. Offers health examinations to new children, those with known health problems, athletes, and grades 1, 4, 7, 10.
2. Offers immunizations and vaccinations.
3. Gives pre-employment teacher examination and at end of probation period.
4. Gives pre-employment examinations to all other employees, and annual examinations to lunchroom workers.
5. Offers limited consultation and preventive services to employees.
6. Serves parents for individual problems, P.T.A., and preschool groups.
7. Cooperates in building health curriculum.
8. Examines handicapped children for special education programs.

General Objectives

1. Integration of health services into school program.
2. Teachers participation in health program.
3. Health education through experience.
4. Community understanding of child health needs and responsibility for them.
5. Optimum health for school employees, as well as children.

* * * * *

Antihistaminic Drug for Common Cold,—Shaw and Wightman treated in a university community 443 students with symptoms of a common cold, which were present for not more than forty-eight hours. Two hundred and fifteen patients were given a placebo, and 228 were given tablets containing 50 mg. of 2-phenylbenzylaminomethylimidazoline hydrochloride. Three hundred and four of the 443 took the tablets for three days, 114 took them for

two days, and 25 took them for only one day. Fifty per cent of those receiving placebos and 53 per cent of those receiving the antihistamine drug thought their symptoms had been helped by the medication. Sore throat, running or congested nose and malaise were aided equally by the placebo and the antihistaminic drug. Cough was benefitted more by the drug. Patients with a history of allergy appeared to receive somewhat more benefit from the drug than from the placebo. The beneficial effect of the antihistaminic drug in this study appeared questionable. Journal A.M.A., August 12, 1950, p. 1368.

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The Health Coordinator,—In the recent book published by the W. H. Kellogg Foundation and entitled "An Experience in Health Education," we find the following notation concerning the Health Coordinator:

"Reference was made in the preceding chapter to a study reported to the 1948 meeting of the American School Health Association in which was noted the rapid increase in the number of colleges establishing the position of health coordinator, in spite of the fact that the duties belonging to that position are at present ill-defined and somewhat controversial. It is true that the activities of most persons holding this title have been rather uncertain and exploratory, as far as their campus services can be ascertained, and they have achieved no conspicuous success as yet in promoting genuine interdepartmental coordination. Although the outlines of the duties and responsibilities of this position are beginning to take definite form here and there, a more complete picture of the future services and usefulness of the health coordinator must be partly inferred from the clearly apparent needs now being more widely recognized. In simple terms, coordination means getting teamwork, and both the pattern and justification for this were demonstrated in the participating secondary schools." —*A. O. DeW.*

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REVIEWS

School Health Manual, Second Edition, Revised*,—The reviewer is heartily in sympathy with this effort of the Joint Committees of the Minnesota State Departments of Health and Education to establish and clarify a definitive program and policies as a guide for teachers, nurses, directors and school administrators in the area of school health service. The Foreword again emphasizes the need for close cooperation between schools

*Prepared by a Joint Committee of the Minnesota Department of Health and State Department of Education, 1950.

and communities through the organization and functioning of school and community health councils.

The health service program is discussed under several chapter headings which include:

Chapter I, Objectives and Trends.
Chapter II, Health Responsibilities.
Chapter III, Health Appraisal.
Chapter IV, Health Protection.
Chapter V, Rural School Health Services.
Chapter VI, Evaluative Schedules.
Chapter VII, Sources of Information.
Chapter VIII, Minnesota Statutes.

Chapter II deals with the health responsibilities of school personnel, and states that local boards of education are responsible for the provision and maintenance of a school health program, for employment of school health personnel and for administering of that program by the local superintendent of schools. The responsibility for securing medical and dental care rests with parents, and when they are unable, financially, assistance is sought from the County Welfare Board, County Medical Society or other health agencies.

Chapter II recommends also the appointment of a teacher to serve as school health director, and the organization of a health council, including representatives from the schools and community to assist the health director in carrying out the school health program. It is interesting to know that Minnesota school regulations state that ". . . in each school system, regardless of size, the superintendent shall appoint a health director." The duties and responsibilities of the health director are outlined in some detail as they concern "a working knowledge of every phase of the health program — health services, hygiene of the school environment, hygiene of the instructional program and health instruction; familiarity with materials and methods; promotion of in-service training and evaluation of results." Many school administrators and health service specialists would be interested in the certification requirements established by the State of Minnesota for this very broad and important position. If standards have been established they have been omitted in this manual.

The duties and responsibilities are established also in Chapter II for school physicians, school dentists, school nurses and other public health nurses, classroom teachers, school custodians and school bus drivers. Again certification requirements for health service personnel would, I believe, be helpful and are essential for the school administrator in his selection of personnel for service to

school children. Practical suggestions are offered for the organization, membership and duties of the school health council.

Chapter III, Health Appraisal stresses the need for health examination and follow-through of children in the summer before school entrance. We wish this sound policy in child health protection could have been broadened to cover the period from birth to school entrance, with a transcript of the child's cumulative health record transmitted to the school on entrance. In this chapter emphasis is placed on medical examination, diagnosis and treatment by the family physicians for all pupils. However, little or no direction is given as to how this objective may be achieved to the point where pupils actually receive needed medical and dental care. Many years of experience in school health service indicate the need for an effective program of health education for the individual child, and for his parents so they learn the value of sound health practices and develop their individual responsibility for carrying out the recommendations of health specialists. This is a time-consuming job, and in many cases necessitates repeated home visits by school nurse-teachers, who are trained and experienced in school health service.

Chapter III includes detailed instructions regarding procedures, such as daily health observation by the teachers, weighing and measuring, conservation of vision, conservation of hearing, speech and body mechanics.

Chapter IV—Health Protection, discusses other phases of the health service program under the following headings: Control of Communicable Diseases, School Dental Health, Nutrition, School Sanitation, Accident Prevention, First Aid and Handicapped Children.

Chapter V is devoted to the health service program for rural children. We agree fully that rural children need at least as comprehensive a program of health service as do urban children, and that constant stimulation and leadership are essential on the state level in order to educate local communities as to the need for a broad health service program, the employment of sufficient qualified health service personnel, and for provision of essential facilities for rural school children. In other words, the health *needs* of children rather than the present budget should determine the quality and quantity of health services which should be provided by parents and the community for their children. In this chapter it is encouraging to read that an "annual thorough physical examinations (not merely inspections) are desirable for all preschool and school children, as well as for all adults," and that

"physical examinations are most effectively carried out in the family physician's or pediatrician's office, with a parent present and the child's complete health history available." Experience indicates the *need* for at least an annual medical appraisal which should prevail, rather than less frequent attention "depending upon available resources." Certainly essential health resources can be secured for the children of America if parents and communities understand fully the significance of preventive and protective measures.

A very important area of school health service is, of course, the development of evaluative techniques in terms of pupil outcomes. Chapter VI—"Evaluative Schedules" presents a suggested form to assist the local schools in evaluating the provision of "basic health requirements." This form is divided into sixteen sections, dealing with many phases of the health service program. A similar outline has proved to be very helpful in New York State for school administrators and health personnel in a self-evaluation of the health aspects of the school plant.

Chapter VII lists "Sources of Information and Advice," and Chapter VIII cites Minnesota's statutes relating to school health service. Both of these should be helpful to school personnel as is the Index on pages 202-103 in locating specific policies as problems arise.

This manual should serve as a practical guide to local school administrators and their health service staffs in regard to programs, policies and procedures for finding and meeting the health service needs of school children. The next step obviously is getting the program into effect, not only for urban but also for each rural school child. The manual should also be of interest to many state and national specialists in the field of school health service.

LILLIAN DeARMIT, M.D.,
Chief, Bureau of Health Service,
New York State Department of Education.

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"Radiographic Atlas of Skeletal Development of the Hand and Wrist"

William Walter Grulich, M.A., Ph.D. and S. Idell Pyle, M.S., Stanford University Press, Stanford, Calif., 1950. pp. 190. Price $10.00.

This is a study of skeletal development in great detail and profusely illustrated with pictures of children at various young ages, and comparisons of these photographs with X-ray pictures of the wrist and hand bone development of the same individuals at the same ages.

The comparison of surface size and appearance with bony growth in the same child has been intensely studied for a long time. As far back as 1909 an article by Dr. Thomas M. Rotch, Professor of Pediatrics at the Harvard Medical School was published.[1] In 1910 or 1911 at the Annual Convention of the Department of Superintendence of the N.E.A. at Indianapolis, Dr. Rotch gave a lantern-slide X-ray illustrated presentation of the relation of bony growth to age, particularly stressing the relation of chronological age, mental age, and the bony development of the hand and wrist. The writer of this review heard this address and saw the very illuminating X-ray lantern-slides.

In 1923, Prescott[2] published his report on the Determination of Anatomical Age in School Children and Its Relation to Mental Development.

In 1939, Dr. Grulich himself read before the American School Health Association, meeting at Pittsburgh, "Studies on the Growth and Development of Adolescents and Their Implications for the Health Program of the Adolescent."[3]

Now comes this master study. The contents lists such sections as the Need for Dependable Method; The Inadequacy of Height-Weight-Age Tables; The Relationship of the Development Status to that of the Reproductive System; sets standards of bony development for various ages and for each of the sexes; and discusses Maturity Indicators of Individual Bones and Epiphyses.

This is a most valuable study. To one who is basically interested in the physical development of childhood and youth, it seems particularly important that this study report should have a prominent position in the libraries of Schools of Education and in the armamentarium of the teacher — particularly the teacher supervisor and director, in the areas of physical education and health services.

A study of these age-plates in comparison with the sports accident rates in adolescence would be extremely interesting and valuable. Possibly such a study comparison would give additional support to those engaged in school health and school administration, who feel that crushing body contact sports have no place in the Junior High School program of physical education.— *C. H. K.*

1. Rotch, T. M., "A Study of the Development of the Bones in Children by the Roentgen Method, with a View of Establishing a Developmental Index for the Grading of and the Protection of Early Life."—Tr. Ass'n. Am. Physicians, Philadelphia, 24, 603-624. 1909. 12 plates.
2. Prescott, Daniel A., "Determination of Anatomical Age in School Children and Its Relation to Mental Development." (Harvard Monographs in Education, ser. 1. Studies in Educational Psychology and Educational Measurement. No. 5, 1923.)
3. Published in the Journal of School Health, May, 1940, p. 133.

"An Experience in Health Education,"—W. H. Kellogg Foundation, Battle Creek, Mich.

This publication summarizes an experiment in improving our health education teaching at all levels so as to bring greater benefits to the recipients, the boys and girls of the elementary and high schools.

The experiment was made possible by a grant of more than a million dollars by the W. H. Kellogg Foundation, and through the cooperation of the state education departments of 24 states. Twenty-two of these states finished the first three-year project. At the end of the first three-year period, five of the states in the original project were selected for a continuing assignment of an additional three years. In the second three-year period particular emphasis was placed upon the training of teachers for participation in effective health education.

Dr. Frank W. Thomas, former President of the Fresno State College, California, reported the development of the experiment and his report forms the basis of the publication. The large number and the distribution of the states represented; the great number of individual schools represented; and the thousands of boys and girls engaged in the project makes this a very reliable and useful publication for everyone interested in health education at any level.

The publication discusses the role of the administrator; the relation of environment, service and learning; the school and the community; the health council; the college and regional service; learning while teaching; better preparation for future teachers; some pathways to the future; how well did the children learn; the problem of the evaluation; and the general conclusions.

The publication is enriched with many illustrations. It is well organized in a concise and practical way, and gives the results of one of the most extensive projects in health education that has been developed in America.—*A. O. DeW.*

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MEETINGS

American School Health Association and the American Public Health Association at St. Louis, Mo., October 29-November 3, 1950. Headquarters at the Hotel Jefferson.

American Association for Health, Physical Education and Recreation, at Detroit, Michigan, April 14-20, 1951.

The Annual Convention of the National Society for Crippled Children and Adults will be held October 26, 27 and 28, 1950, at the Stevens Hotel, Chicago.